# *3 DESCRIPTION OF ALTERNATIVE SOLUTIONS*

This chapter presents a description of the packages of alternatives to the widening of Highway 101, and includes an overview of the Technical Advisory Committee (TAC), Community Advisory Committee (CAC), and public participation efforts which led to the development of these alternative packages. The development of alternatives was a three step process:

publicly generated ideas
translation into individual measures
1.development of alternative packages

The process is described in the following sections. The level of analysis in this study requires that alternatives be fairly well defined in terms of service levels, locations of significant access points, and costs, however, detailed design issues are beyond the scope of this study.

A No Build and a Highway Widening alternative are also part of the Highway 101 Alternatives Analysis. Descriptions of these two alternatives were not subject to the review and refinement process listed above. The Highway Widening alternative represents the addition of two mixed flow (all vehicle types permitted) highway lanes in the Highway 101 Corridor as analyzed in the Caltrans *Draft Environmental Impact Statement/Report (Caltrans, 1993).* Project limits for this alternative extend from 1.1 miles west of the Ventura County line to Milpas Street in the City of Santa Barbara.

## 3.1 PROCESS TO DETERMINE ALTERNATIVES

Alternatives to the Highway 101 Widening Project were developed with public input. An early scoping meeting in February, 1994 identified basic ideas to reduce congestion and generally reduce automobile usage which the community identified as important. Ideas were then grouped and refined into preliminary alternative measures, shaped through review by both the Technical Advisory Committee (TAC) and Community Advisory Committee (CAC) and refined into packages of alternatives to be assessed for effectiveness in meeting project goals. Potential measures and strategies were initially defined in the Task 3 Technical Memorandum, *Effectiveness of Alternative Transportation Measures*, (Appendix C). Recommendations in this draft technical report were presented and further refined at combined meetings of the TAC/CAC. A refined set of three alternative packages was presented at the May, 1994 TAC/CAC meeting for review and comment. Input at this meeting, and at a July, 1994 TAC meeting, as well as additional comments from Caltrans resulted in the final set of alternative packages. These packages were then evaluated for their effectiveness in addressing the identified problem statement - the avoidance of the need to widen Highway 101 until at least the year 2015. Each stage in the development of alternatives is

described below. Key results are identified after each stage to help the reader follow the progression of alternatives development.

Public Scoping Workshop - February, 1994. An initial public scoping workshop was held at the Miramar Hotel Convention Center on the evening of February 17, 1994. The purpose of the scoping meeting was to identify those issues which the community believed should be addressed in the alternatives analysis. The meeting, attended by approximately 55 people, was hosted by the Santa Barbara County Association of Governments (SBCAG) and was conducted in three parts:

Introduction and Overview
Brainstorming Sessions in Small Groups
•.Presentation of Small Group Results and Next Steps

An overview of alternative strategies was presented. This included a description of :

alternative transit modes,
nonmotorized elements,
•.intercity/commuter rail elements,
•.travel demand management strategies,
•.operational management strategies, and
land use/transportation strategies.

Each overview included a presentation by a technical specialist from the consultant team who offered information on the goal of the strategy, general costs, conditions and methods to implement the strategy, effectiveness, and the types of trips which may be most affected by the approach. Handout materials were provided outlining these factors for each strategy.

The second part of the workshop entailed a 90 minute brainstorming session on alternative transportation modes. During this portion of the scoping workshop participants were divided into six groups of 8 - 10 people, and asked to develop lists of alternatives, issues and ideas for consideration by SBCAG and the project team. Each group had a facilitator who noted all ideas on a flip chart and served to keep the group focused. Specialists rotated between groups to provide input and answer questions throughout the session. This provided each group the opportunity to explore all modes and options. At the end of the brainstorming session each group had identified alternatives and issues to be considered.

The final part of the meeting included presentations of the ideas generated by a representative of each group. These were listed and similar ideas were identified. The meeting ended with a brief overview of the next steps in the alternatives analysis process. Ideas, alternatives and issues were coalesced into a list of 29 potential measures for use in the development of packages of measures or alternatives. Individual measures that were identified at the February scoping meeting are described in section 3.2.1. A meeting summary and copies of the handouts are included in Appendix F.

Joint Technical Advisory Committee and Community Advisory Committee Meeting - April, 1994. A joint meeting of the study's TAC and CAC was held in April. The session was conducted in a workshop format with the primary focus to define and refine alternatives. Consultant team technical specialists presented overviews of each strategy similar to the presentations made at the scoping workshop. Transportation services for residents and visitor/tourist services were described for transit and TDM strategies. Freeway management strategies, nonmotorized strategies, and land use strategies were also detailed. Results of the scoping workshop were presented and TAC/CAC members discussed and refined how each of the approaches

might apply to the Highway 101 Corridor, as well as generally discussing preferences and priorities. The meeting concluded with a discussion of the preliminary combining of strategies into alternative "packages". Preliminary discussion centered on the materials presented in the Task 3 Draft Technical Report - *Effectiveness of Alternative Transportation Measures* (Appendix C). Five modal categories were discussed again and committee members and the public present at the meeting generated the comments and ideas listed in Table 3-1.

Joint TAC/CAC Meeting May, 1994. A revised set of three alternative packages was prepared and presented to the joint CAC/TAC. This set, described in detail in Section 3.3 below, includes three alternative packages:

An enhanced express bus oriented service package,
A rail transit oriented service package with bus and shuttle supportive measures, and
An automobile pricing disincentive/enhanced transportation demand management (TDM) strategy.

These packages were specifically constructed to test the range of potential solutions to forecast traffic growth and associated congestion in the Corridor. It was anticipated that the specific measures and strategies recommended for further study and implementation after completion of this project would likely be a combination of elements from more than one of these packages.

Discussion with the TAC/CAC refined elements in each of the packages, however, the bus and rail service categories remained generally as proposed. Questions regarding the rail service package asked for greater clarification of bus service concepts associated with this alternative. Committee members noted that much of the proposed TDM efforts were part of current TDM ordinance. Elements of the pricing/TDM strategy were further refined to reflect *full realization* of existing and planned ordinances. Full realization of existing ordinances assumes incentives will be in place to ensure that 100 percent of employers subject to the regulation will implement ridesharing, alternative work arrangement strategies, and transit subsidies for their employees.

TAC/CAC Meeting July, 1994. A review of the study's intercept travel survey results was presented. Alternative packages were compared with survey results which identified target travel markets. The travel survey results confirmed that a significant work trip travel market currently exists between Ventura County and the Corridor (22 percent during the evening peak period), and within the Corridor between Carpinteria and Santa Barbara (18 percent). An additional 4 percent of those surveyed traveled from the Corridor to south of Ventura County during the evening commute. The survey also confirmed the high percentage of visitor/tourist trips on weekends originating in Ventura and Los Angeles Counties which use Highway 101. The confirmation of the existing travel markets reinforced the appropriateness of the service plans contained in the proposed

enhanced bus service package and rail transit package for the Corridor.

## 3.2 DESCRIPTION OF INDIVIDUAL MEASURES AND INITIAL PACKAGES

The development of alternatives began with the input from the public scoping meeting and the input received at the joint TAC/CAC meetings. Individual measures were identified, complementary measures were grouped, and overall effectiveness of identified measures was evaluated based on the historical performance of similar measures in other urban areas of similar size and/or character such as Santa Cruz, Ca., Eugene, Ore. and Madison, Wis. Three preliminary packages of measures were identified. The subsequent sections describe each of these steps.

### 3.2.1 Results of the Scoping Meeting

Recommendations from the scoping meeting included expansion or development of modal technologies within the Corridor; increased education and marketing approaches; automobile use disincentives such as tolls, increased parking charges or closing freeway ramps; and incentives for mode shift strategies including the creation of auto free zones and employer based programs. The category of “other options” included greater flexibility of services, regional travel solutions, private sector participation, multimodal solutions, water-borne opportunities, and use of land use policies to reduce automobile trip making. The consultant team grouped the ideas generated at the scoping workshop into the measures and strategies listed in Table 3-2. Enumerated ideas were grouped by type of strategy:

Transit Related
•.Pedestrian/Bike Modes
HOV incentives/Single Occupant Vehicle (SOV) Barriers
•.Ridesharing Promotion
•.Freeway Design/Enhanced Operations
•.Other Options/Ideas

The next step in the development of alternatives was the identification of individual measures and mutually supportive combinations of measures. The consultant team developed preliminary measures (summarized briefly above in the description of the Task 3 Technical Report) based on the team’s professional knowledge of bus, rail and TDM services and methods, and their suitability to the Corridor’s travel markets. Key concerns and elements identified by the public (as listed in Table 3-1) and the TAC and CAC were incorporated. Ideas which provided a framework for combining measures into packages are identified below:

Several measures will work best in association with each other; for instance, express bus services typically connect remote park-and-ride lots to geographic concentrations of employment. Local bus transit lines become more attractive to discretionary "non-captive"

riders if headways are shorter or if skip-stop or express bus trips (at peak travel times) help to make the bus ride a faster trip. Other related improvements, such as freeway ramp metering with bypass lanes for High Occupancy Vehicles (HOV), can further enhance the travel time performance of such express bus lines as compared with the auto, while giving an incentive for non-transit ridesharing among carpoolers and vanpoolers. These efforts also serve to reinforce the existing TDM ordinance implementation by offering more and better options to driving alone.

Some measures might be valid actions as interim "precursors" to more permanent action items, which warrant a longer lead time to implement. For instance, inter-county commuter rail service might be a future improvement, for which building a long-distance market (via express bus lines or vanpools) could be a near-term prerequisite for future success. Shuttle operations (as deployed along State Street and the Waterfront) might become viable experiments elsewhere in the Corridor, as both tourists and residents become accustomed to their presence and availability for short-haul trips. In some cases, shuttles could also serve as local feeders to line-haul transportation services (such as buses or trains); shuttles themselves can be a more affordable choice in terms of vehicle acquisition costs than deploying a full size transit bus on such short lines.

Other non-motorized modes (namely walking and biking) can become even more viable travel options, if carefully planned for and integrated into the overall public transportation system. The concept of "bike-and-ride" travel has been successfully tested by other medium-sized cities, including San Diego, Eugene, Oregon and Boulder, Colorado. In August 1994, the MTD tested the physical and operational feasibility of front end bus racks on the route between Downtown Santa Barbara and the UCSB campus. The test period was quite short and the usage somewhat low in the early weeks mostly due to the lack of awareness by potential users; the drivers surveyed the 120 program participants and reported overall satisfaction of the public with this feature. The MTD plans to implement a large-scale demonstration with the same supplier (Sportsworks NW, Inc.) by the year 1996, subject to funding approval from the APC Districts Motor Vehicle Surcharge Fund. Based on the expected passage of a bill in Sacramento, meant to lift the current ban in the California Vehicle Code on the 50 feet clearance (in excess of 36 inches) in front of a transit coach, the MTD plans to expand the next phase of this innovative program to four routes (including the route from Carpinteria) over a 6-month period. The integration of walking and biking elements could become a common denominator to all study strategies. This is feasible, regardless of the underlying “theme” of the alternative package being proposed, since the market-share for both modes combined will remain small relative to total person trips.

Some innovative concepts might lack an extensive track record elsewhere, yet become the catalyst for good operational options in the South Coast area. Examples might be the levy of tolls on an existing freeway Corridor segment (instead of a new, exclusive toll

facility), or ramps closed to SOVs at designated hours or on select days (rather than designing and building permanent and separate HOV access ramps in narrow rights-of-way).

### 3.2.2 Initial Alternatives Packages and Individual Measures

The Task 3 technical report, *Effectiveness of Alternative Transportation Measures* (Appendix C), grouped the individual measures into three candidate strategies, each one responding to a primary focus identified below. Each contains elements from other categories of strategies. The philosophy underlying development of the packages was to develop a wide range of alternative concepts to analyze in a feasible number of packages so that conclusions can be drawn as to which combinations of strategies best meet the objective of avoiding the need to widen Highway 101 until at least the year 2015.

A transit focused strategy including rail and bus, with several supporting measures from other types of strategies,

A non-transit, High Occupancy Vehicle (HOV) strategy with several supporting measures, and,

A mix of both transit and other HOV elements.

Individual Measures for a Transit Focused Strategy

Individual elements and measures for transit focused strategies include service elements, capital elements, and support elements. Numerous measures were considered. Not all measures are easily assessed using available travel forecasting models.

Service elements of a transit focused strategy include the following:

*Local bus transit and electric shuttle service improvements* (longer operating hours, greater service coverage, higher frequency, more direct services by travel market segment etc.). These were tailored to known and emerging target markets, including work and non-work trips based on travel survey results, and were geared to the seasonal needs of visitors or tourists.

*Express bus route along the Highway 101 Corridor* similar to the current “Clean Air Express” (serving Lompoc, Buellton, Santa Maria, Santa Ynez and Ventura) or supplemental inter-city trains serving commuter and/or other travel markets along the coastal route to offer more frequent and more continuous services to longer-distance trip-makers into and out of the Study Area. Those expanded services would strive to shift commuters or other long-distance travelers from single occupant vehicles (SOVs).

*Semi-local/semi-express bus connections* between tourist destinations found to the north, south, or within Santa Barbara, Goleta, Carpinteria, Montecito, Solvang and the surrounding wine country, or other attractions. These locations may either receive their own dedicated services, or serve as more convenient connections among them for linking local activities without delays at transit centers. Use of timed-transfer scheduling was considered as a

potentially attractive operational strategy for bus operations. Timed transfers are created by coordinating the schedules of various bus lines so that the waiting time required when a rider is transferring between bus routes is minimized.

Capital elements considered in support of transit services include:

*Addition of more visible, easier to access and egress park-and-ride lots*, served by the enhanced bus transit lines and/or the improved train operations; smaller lots (on the order of 25 - 50 spaces) might be more adapted to the study setting (in view of the local scarcity of land parcels for large lots with 350 or more parking spaces).

*New or improved amenities* for riders who are waiting/transferring at key locations served by multiple bus or shuttle routes, such as bike lockers, automated schedule display with next bus arrival time(s) on each route, other connecting services' timetables at the nearest train station or intercity bus depot, etc...

*Corridor-wide provisions for non-vehicular travel*, such as separated bike lanes, adequate protection for pedestrians and bicyclists at crossings/intersections, as well as special amenities at transit centers/park-and-ride lots such as bicycle storage lockers. The use of bike-holders on buses and the provision for off-peak period bike access on trains (as done by CalTrain in the Bay Area) would be considered as part of this effort.

*Other physical upgrades to local bus stops* with benches, shelters, and permanent posting of transit schedule information at the stops.

Support measures considered for the transit focused strategy would consist of both existing and new elements. These are summarized as follows:

A continuation and expansion of existing commuter-oriented measures such as:

- Transit fare subsidies by employers (currently 10% of area employers provide subsidies);
- Guaranteed ride home provisions (for transit riders who, on short notice, must work later than their last bus home or have an unexpected need during the workday to travel outside their office);
- More flexible start/end times at work to accommodate the transit schedules and minimize long wait times for some commuters.

Other newer and broader support measures such as:

- Comprehensive parking management programs which attempt to control the availability and price of parking so as to discourage automobile use for commuting by solo drivers;
- Other ridesharing promotional benefits for visitors like invitations to cultural programs at museums or special events with a transit ticket, or discount coupons at local restaurants and theaters;

- Other tourist-oriented incentives such as subsidies of rail passenger fares (for example, via the Conference and Visitors Bureau), or mail-outs to visitors of an information booklet with shuttle maps and transit schedules showing the major tourist attractions and accompanied by special discounts for local accommodations, shops, and/or free bus rides.

Accommodating seasonal variations in tourist travel to the area would require more flexible transit services such as:

Enhancing local shuttle/transit services during the peak recreational months.

Adding publicly or privately operated jitney services where stops are made upon the rider's request, instead of solely at designated bus/shuttle stops, and for which schedules are adapted real-time to day-to-day fluctuations in ridership.

Introducing deviations from a fixed route to accommodate special events in the late fall/winter months.

Individual Measures for a Non-Transit, High Occupancy Vehicle (HOV)-Focused Strategy

Service or Travel Demand Management (TDM)-related elements under the non transit, HOV-focused strategy include:

Enhanced ride matching services through greater intercounty coordination for employees residing in the counties of Ventura, San Luis Obispo and Los Angeles as well as Santa Barbara;

Vanpool promotion with the option to establish formal Transportation Management Associations (TMAs) at key activity sub-areas, where coordinated efforts among smaller employers could result in a more effective delivery of operational and capital support to potential vanpool drivers and riders;

HOV priorities along major arterials or at freeway on-ramps, where feasible to provide a dedicated HOV queue bypass lane as part of a potential Corridor level ramp metering system; and

Proactive support for attractive telecommuting options available to long-distance workers to reduce the need for a Monday through Friday commute. This might lead to the establishment of a shared telecommuting site among various private employers and government agencies. Recent start-up by Santa Barbara County of a teleconferencing program for its employees is an initial phase of this type of activity.

Existing TDM support incentives per the recent TDM ordinance (aimed at work sites with more than 20 employees) include at least the following elements:

Preferential parking for carpool vehicles at the destination end (worksite measures);
Subsidies of vanpool rides by participating employees/businesses;

•.Compressed work weeks or flextime policies by employers; and
•.Designation of Employee Transportation Coordinators (ETCs) at larger work centers.

Other support measures to be contemplated for this HOV-focused strategy could include:

Discount for fuel used on the vanpool fleet;
Free use of the electric shuttle services at midday by vanpoolers or carpoolers;
Plus other ridesharing promotional benefits like invitations to cultural programs at museums and special events (for regular users of the carpools/vanpools) or discount coupons to movie theater/local restaurants offered to the most repeat ridesharers.

As part of the above two strategies, parking management tools were evaluated for their relevance to the South Coast area. In downtown Santa Barbara, techniques may focus on controlling the price and supply of parking and using a mix of HOV incentives and Single Occupant Vehicle (SOV) disincentives, as best suited for each site. These tools will warrant either modifying the current city parking regulations, or introducing stronger performance standards for the larger employers' ridesharing/transit incentives programs (i.e. mandatory in lieu of voluntary compliance). Yet, these parking management strategies may face significant opposition from retailers, restaurant managers, or employers along the State Street retail/commercial district, as well as elsewhere in the South Coast.

In addition, the development of a comprehensive parking management program might entail other non-commuter oriented measures, like creating incentives for non-SOV travel within the Study Area by local visitors/tourists. This could be supported by local incentives tailored to tourists such as:

Special discounts for shoppers;
Restaurant Discounts;
•.Reduced prices for entertainment; and
Mileage credit by airline companies for those tourists committed to making their visits as little auto-dependent as possible.

Qualitative and, to the extent possible, quantitative assessments of the effectiveness of Individual measures were presented along with the measures/packages described above. The findings of this initial evaluation research were presented to the TAC/CAC as an interim step to the refinement of the alternative packages.

## 3.3 REFINEMENT OF ALTERNATIVE PACKAGES

Alternative packages described in the preceding section were discussed with the TAC and CAC in April, 1994. Comments and priorities listed in Table 3-1 by committee members resulted in revisions and adjustments. Three revised alternative packages were presented to the combined TAC/CAC in May 1994. The emphasis of the

first package is an enhanced bus transit strategy, the second is a rail transit strategy with supporting bus and shuttle service, and the third is an enhanced Pricing Disincentive/Enhanced Travel Demand Management (TDM) Strategy. The pricing and demand management strategy was evaluated - both considering the full implementation of the existing ordinances and the use of pricing incentives and disincentives to create greater mode shift out of single occupant vehicles (SOVs) and into high occupancy vehicles (HOVs) and transit.

Two additional alternatives are considered in this analysis. A No Build alternative, which assumes only existing roadway infrastructure to handle travel generated by the forecast population and employment growth as described in Chapter 2, was evaluated. A Highway Widening alternative, consistent with Caltrans current widening proposal as described in the *Highway 101 Draft Environmental Impact Statement/Report (Caltrans, March, 1993)* was also evaluated, to form a basis of comparison for these three alternative packages.

Bicycle and pedestrian elements are assumed for all three alternatives and vary to match the number and location of bus or rail stations. These elements, common to all alternatives except the No Build, are described in section 3.3.4.

Each of the packages analyzed as alternatives to the widening of Highway 101 are described in detail in the following sections.

### 3.3.1 Enhanced Bus Transit Package

The enhanced bus transit package would provide significant express bus service along the Highway 101 Corridor on both weekdays and weekends. Enhanced bus service includes new express bus service, modifications and additions to existing MTD fixed route service and to shuttle services, as well as new bus "station" locations. Each element of the enhanced bus transit package is described below. Figure 3-1 indicates conceptual bus station locations, route and shuttle rerouting, and new service locations. These conceptual design and service elements would need to be refined in a subsequent, detailed, transit operations planning analysis before their potential implementation.

Weekday Express Bus Service

A two-way express bus service would be implemented along the length of the Highway 101/Route 217 between downtown Ventura and Isla Vista/UCSB. A weekday express bus route with five intermediate stops (freeway bus "stations) would operate from 6:00 a.m. until 10:30 p.m. between Carpinteria and Isla Vista. Additionally, a separate express bus line between Ventura and Isla Vista would also operate. Northbound buses originating in Ventura would be through-routed to the northern terminus in Isla Vista. Southbound buses originating in Isla Vista and bound to Ventura would also be through-routed. Passengers traveling between Ventura and Santa Barbara would not be required to transfer between express bus routes in Carpinteria.

Proposed Service Levels for the Express Bus Service

- 10 minute headways in the morning and afternoon peak periods (6:00 - 8:30 a.m.) and (4:00 - 6:30 p.m.) in both directions between Carpinteria and Isla Vista;
- 20 minute headways in the morning and afternoon peak periods in both directions between Ventura and Carpinteria;
- 20 minute headways in midday hours between Carpinteria and Isla Vista; and
- 40 minute headways in midday hours between Ventura and Carpinteria;
- 30 minute headways in evenings between Carpinteria and Isla Vista;
- No evening service to Ventura or further south of Carpinteria.

Service Coverage for Express Bus Service

Intermediate or “flyer stops” at the following freeway “bus stations”. These bus stations would provide for passenger boarding and alighting while minimizing bus stopping times by providing physical bus stop facilities within or immediately adjacent to the Highway 101 and Route 217 rights-of-way. Express buses would exit the freeway main line, stop at these bus stations, then re-enter the highway to continue their trip using exclusive, bus-only ramps (see Figure 3-1). All bus stations would have to meet all Caltrans standards and provide grade separated access for transit riders from both sides of the freeways. This may require additional right-of-way acquisition. These flyer stops would be located at:

- Carpinteria at the Linden Avenue/Highway 101 interchange,
- Summerland at the Via Real/Evans Avenue/Hollister Street/Highway 101 interchange,
- Montecito at the San Ysidro Road/Highway 101 interchange,
- Downtown Santa Barbara at the Castillo Street/Highway 101 interchange - this stop would be used for transit connections to Downtown, the Waterfront, and the Santa Barbara City College campus,
- Five Points at the La Cumbre Road/Las Palmas Drive/Highway 101 interchange
- Goleta at the Hollister/Route 217 interchange, and
- Isla Vista at the existing UCSB transfer center near the north entrance to the campus along University Road.

Forecast riding time on the express bus between downtown Ventura and the Castillo Street “flyer” stop (Downtown Santa Barbara) is estimated at 47 minutes. This time would increase as traffic congestion increased on Highway 101 making the express bus service less attractive. The potential addition of bus only or HOV lanes along the most congested stretches of Highway 101 in the future would improve the competitiveness of the express bus travel times compared with SOV travel times. Park and ride lots would be provided within walking distance to the proposed “flyer” stops in Carpinteria, Five Points, Goleta and Isla Vista. The potential for accommodating park

and ride lots at other intermediate stops appears very limited by the lack of available land. Local interface options other than park and ride access include transfers to and from the Metropolitan Transit District (MTD) bus routes, private shuttles, dial-a-ride vans or minibuses, plus kiss-and-ride opportunities. Except for Carpinteria, Five Points, and Isla Vista, most of the flyer stops would expect to have the majority of riders arrive at these stops by walking, due to their locations.

Weekday Express Bus Service Interface with Local MTD Routes

Existing MTD routes, with some modifications, are expected to serve a collection/distribution function for the freeway flyer stops and associated express bus service. Significant increases over existing MTD service levels in terms of peak period, base, and evening service frequencies will be needed to enhance the attractiveness of bus transit. Key to the success of the new service will be to ensure minimal wait times for passengers transferring between express and local buses. Travel behavior research has shown that travelers find time spent transferring two to three times more onerous than the time spent riding on the bus (see Section 4.2). Therefore, to provide express bus service that can attract "choice" riders (i.e. those with cars available to them), transfer time and total travel time should be minimized. Table 3-3 provides a comparison of current and proposed weekday operating hours for the existing or new "local" bus routes. Table 3-3 also summarizes the existing and proposed weekday headways for peak, base and evening periods. "Peak" refers to morning (a.m.) and evening (p.m.) peak periods, which occur from 6:00 a.m. to 8:30 a.m. and from 4:00 p.m. to 6:30 p.m. "Base" refers to midday hours and the early morning/early evening (i.e. edges of the peak periods) "Evening" refers to service operated after 7:00 p.m. Figure 3-1 shows the Carpinteria to Isla Vista segment of the Highway 101 Corridor with the proposed freeway express bus service. It also provides a schematic layout of local MTD routes and proposed local route extensions in the immediate vicinity of each flyer stop. Detailed assumptions for proposed local feeder bus coverage to and from each flyer stop include:

MTD Route 20 to serve both the Carpinteria and Summerland flyer stops. Connect Route 20 to the proposed Carpinteria freeway flyer stop at Linden Avenue, north of Carpinteria Avenue. Establish a new two way loop route along Holly Avenue, Palm Avenue, Casitas Pass Road and Linden Avenue to connect both sides of the Highway 101 freeway to the Carpinteria flyer stop.

MTD Route 14 to connect to the Montecito flyer stop at San Ysidro Road. Divert Route 20 from the freeway onto North Jameson between San Ysidro Road and Olive Mill Road to augment feeder service to the Montecito flyer stop.

Extend MTD Route 14 from Sheffield Drive and North Jameson following Ortega Hill Road and serve the Summerland flyer stop at Evans Avenue and Via Real. Run the existing clockwise loop (via East Valley Road, Sheffield Drive, North Jameson Lane, and San Ysidro Road) as a two way loop.

MTD Route 16 to connect the Castillo Street flyer stop to Santa Barbara City College and the Downtown Transit Center. Maintain current loop routes both north and south of the freeway while increasing service levels as shown in Table 3-3.

MTD Routes 3, 6, and 11 (along State Street) and MTD Routes 5, 8, and 10 (along La Cumbre Road) to connect at the existing Five Points transfer point. Northbound express buses to exit Highway 101 freeway at La Cumbre Road, run north to State Street, turn left onto State Street, and reenter the freeway further north at the State Street interchange. Southbound express buses to exit Highway 101 freeway at Upper State Street, run east along State Street, then south along La Cumbre Road to reenter the freeway at La Cumbre Road.

MTD Routes 6,8,9 and 12 to connect to the Goleta flyer stop, adjacent to the existing Goleta transfer point on the west side of the Hollister Avenue/Route 217 interchange. Access to Santa Barbara Municipal Airport provided by MTD Route 11.

Express route buses to exit the Route 217 freeway and follow the current path of MTD Route 24 along University Road and El Colegio Road. Connection to MTD Routes 25 and 25-A made at existing UCSB transfer point. Connection to UCSB Shuttle Route 27 made at El Colegio Road and Camino Corto. Detailed service planning would need to be done to determine if El Colegio Road would be able to support the proposed increased bus volumes.

Local MTD bus route changes in terms of either service frequency or route coverage, would require approximately 57 peak period buses to operate in addition to those operated by MTD in 1994. Together with the Highway 101 express route requirement of 15 peak period buses, the enhanced bus service plan would require approximately 72 additional buses over current operating levels. Annual revenue vehicle hours of service are projected to increase by 182,800 for this plan or 117 percent over MTD's 1994 service levels. Twenty six percent of this increase in vehicle hours of service would be a result of the Highway 101 express bus service, 53 percent from increases in local, fixed route services and 21 percent from increases in service on existing shuttle routes and for new shuttle routes.

Weekend Service Element

Expansion of weekend services, particularly to tourist attractions is the focus of recommended changes in weekend service. Components of this expanded service are listed below:

All day non-stop freeway service to be provided on weekends between the Carpinteria park-and-ride lot and the Downtown Santa Barbara Transit Center. Service would cater primarily to travelers and tourists making one-day visits. Potential riders of the weekend service would come from the south and head toward the Downtown Santa Barbara retail core and the Waterfront Area. The two-way service would run every 20 minutes on Saturdays and Sundays from

9:00 a.m. to 10:00 p.m. It would need to be supported by incentives (e.g., merchant discount coupons) and/or disincentives (e.g., increased parking charges in Santa Barbara) to capture ridership.

Maintain the existing Downtown Shuttle to serve local circulation needs along State Street. Maintain weekday headways of every 7 to 10 minutes and shorten weekend headways on the Waterfront Shuttle to 7 to 10 minutes (from the current 15 to 30 minutes) to enhance local weekend circulation along the waterfront with access provided to the Santa Barbara Zoo and the harbor. Continue the thirteen-week summer-month Waterfront Shuttle service extension to Montecito along Coast Village Road from Cabrillo to Olive Mill Road including a return trip.

Add 30 minute frequency weekend service to MTD Route 22 to provide access to the Santa Barbara Mission and the Museum of Natural History. Extend this route northerly along Mission Canyon Road to connect the Downtown Transit Center to the Santa Barbara Botanical Gardens.

Support of weekend bus service extensions and service additions would be provided through promotional incentives tailored to visitors such as: discount coupons to restaurants, sales coupons to retail outlets, or free admissions to museums and special events. Approaches to this support effort are described in the TDM section.

Costs

The capital costs for the enhanced bus service package are estimated to range between $43 to $47 million, expressed in 1994 dollars. This includes the following estimated cost components:

$23 million for additional buses, shuttles and mini-buses/vans.

$10 - $15 million for fixed transit facilities including freeway flyer stations, park and ride lots, and rehabilitation and upgrading of existing transit centers. The estimated cost varies depending upon the amount of private land that must be acquired for these facilities.

$4.5 million for a new bus maintenance and storage facility to accommodate the 72 additional buses in the fleet.

•. $2.7 million for exclusive bus ramps at proposed freeway flyer stations on Highway 101, assuming no new right of way requirements for these lanes/ramps.

$1.6 million for additional bus passenger amenities including bus shelters, bike lockers, and pedestrian amenities.

Annual operating and maintenance costs to implement these enhanced bus services are projected to cost an additional $10.3 and $11.7 million per year in 1994 dollars, over and above MTD's current operating and maintenance costs. The lower estimate is based upon the assumption that the new express services are contracted out to private company operation, while the higher number assumes that MTD

would operate all new services as well as continue to operate the existing bus services. However, these increased operating costs would be offset somewhat by increases in passenger fare revenues from increased ridership. Typically 25 to 30 percent of the operating costs of these services would be covered by passenger fares. Specific fare policies would be determined by MTD as part of a detailed operations planning study, but typical fares for premium express bus services would range from $1.00 to $1.50 one-way (1994 dollars) compared with MTD's current fare of $0.75. These fares could vary by the distance traveled with higher fares for longer express bus trips. Potential funding sources for these services and facilities are discussed in Chapter 5.

### 3.3.2 Rail Transit Service Package

The rail transit service package assumes the addition of new rail transit service along the Southern Pacific Coast Line. The new rail transit service would operate along the 22 mile segment between Carpinteria and Isla Vista. Figure 3-2 presents a conceptual layout of the rail transit service package. At this conceptual level of alternative definition, trains could either share the existing rail line with existing and recommended Amtrak service and limited freight train service, or would operate on a new dedicated single line track to be built adjacent to the existing track. Two rail technologies are considered under the rail transit service package, Light Rail Transit (LRT) or Diesel Rail Car (DRC). The LRT, which is electrically powered via overhead wires (catenary), would run at-grade along a new, dedicated single-track line parallel to the existing Southern Pacific track. The DRC, which is self propelled using diesel engines, would run on the existing, mostly single track Southern Pacific (SP) line. The Southern Pacific Coast Line right-of-way was chosen for several reasons:

- the costs to implement and improve this Corridor would be lower than costs associated with developing a new right-of-way,
- the existing right-of-way essentially parallels Highway 101 and is proximate to most population and employment in the Corridor, and
- running rail transit on Santa Barbara's city streets would be extremely disruptive for auto traffic, resulting in increased traffic congestion in the downtown area. In addition, this alignment would significantly slow the operating speeds of the rail transit line, making it less attractive to potential riders.

Key operating assumptions for either the LRT or DRC service include:

- 20 minute peak period headways, 40 minute midday headways, 60 minute evening headways on weekdays.
- 30 minute headways on weekend days (6:00 a.m. to 7:00 p.m.) with 60 minute headways evenings on Saturdays, Sundays and holidays.
- Passenger carrying capacities for the two rail vehicle types are essentially identical at 135 passenger "places" (seated and standing) per vehicle for each requiring the same number of

vehicles to be operated in the peak periods assuming two car trains for both technologies.

Identical number and locations of stations along the Southern Pacific Coast Line for either the DRC or the LRT.

•. Identical local feeder bus services to and from existing and planned passenger stations for either DRC or LRT.

Seven rail stations have been conceptualized for this alternative (see Figure 3-2) including:

- Carpinteria at Linden Avenue.
- Summerland near the Evans Avenue entrance to the Look Out County Park.
- Montecito at Olive Mill Road.
- Downtown Santa Barbara at the existing Amtrak station.
- Five Points area near the State Street railroad overpass, east of the intersection of Hollister Avenue and Modoc Road.
- Goleta at the Patterson Avenue railroad underpass.
- Isla Vista at the Storke Avenue/Glenn Annie Road railroad underpass.

Park-and-ride lots have been assumed at the proposed rail transit stations at Carpinteria, Downtown Santa Barbara, Goleta and Isla Vista.

A complimentary express bus service between the Santa Barbara and Ventura Amtrak stations to be provided on weekdays only between 6:00 a.m. and 7:00 p.m. with 20 minute peak period headways, and 40 minute headways at off peak times. The primary purpose of this express bus route is to eliminate the need for a transfer from bus to rail of those travelers originating in Ventura County and destined for downtown Santa Barbara, in order to make transit more attractive to that specific travel market. No evening express bus service would be provided. This is a 30 mile trip with an estimated, forecast non-stop travel time of 40 minutes. This proposed service would require five peak period buses at these frequencies. It is recognized that the express bus service between Santa Barbara and Ventura's existing Amtrak station may provide competing service with a portion of the proposed rail Corridor. The impacts of such competition would be more appropriately addressed at a later, more detailed study should the rail option be selected for further analysis.

In addition to local rail service as proposed in this package, a recent study of intercity and commuter rail services done for the Ventura County Transportation Commission (VCTC) and SBCAG made several recommendations regarding service enhancements that affect the Highway 101 Corridor. These include incrementally increasing the frequency of trains between Los Angeles and Santa Barbara as demand warrants, ultimately to one train every two hours, using idle Metrolink equipment to demonstrate the feasibility of additional weekend recreational service between Los Angeles and Santa Barbara, and improving the right-of-way and stations along the SP tracks, as currently planned in Caltrans' intercity rail program.

Changes to existing bus transit routes would be made to re-orient these local MTD bus lines toward proposed rail transit stations to act as feeder and distributor services. Table 3-4 indicates the changes in service hours, and headways for routes within the Corridor in support of the rail transit service package.

Route modifications and new shuttle service to support the rail transit service package are summarized below:

Access to the Carpinteria rail station to be provided by two routes. The current MTD Route 20 along Carpinteria Avenue will use a new branch along Holly Avenue, 5th Street, and Linden Avenue. The new Carpinteria shuttle route will follow a two-way loop via 8th Street, Palm Avenue, Casitas Pass Road and Linden Avenue.

Access to the Summerland rail station to be provided by the extension of two existing routes. The current MTD Route 20 will use a new leg along Evans Avenue and return to Via Real along Evans Avenue. The current MTD Route 14 will be extended along Ortega Hill Road, Via Real, and Evans Avenue.

Access to the Montecito rail station will be provided by the southern extension of MTD Route 14 along Olive Mill Road. In addition to the proposed extensions, the current clockwise loop along MTD Route 14 (via East Valley Road, Sheffield Drive, North Jameson Lane, and San Ysidro Road) would be run as two way service at all times. The Biltmore Four Seasons Hotel area will be served via loop route from San Ysidro Road, via Hill Road and Butterfly. This will improve the directness of feeder services to both the Montecito and Summerland rail stations.

Access to the existing Santa Barbara passenger rail station will continue to be provided by the State Street Shuttle for trips to and from downtown Santa Barbara. A new shuttle route will connect the existing rail station with Santa Barbara City College. The route will partly follow the paths of the two existing shuttles along State Street and West Cabrillo Boulevard. It will then continue along a clockwise loop via Shoreline Drive, Loma Alta Drive, Cliff Drive and Castillo Street.

Access to the Five Points station (State Street/Modoc Road) will be provided by MTD Routes 6 and 11 along their current paths. In addition, a branch along Modoc Road and Hollister Avenue will connect MTD Route 5 to this station.

Access to the Goleta station (Patterson Avenue) will be provided by the existing MTD Route 8 plus a new shuttle along Route 217 to the UCSB campus transfer point. A deviation of MTD Route 11 to the Patterson Avenue station will enable local bus connections between this rail station and the airport.

Access to the Isla Vista station (Storke Road) will be provided by MTD Routes 12 and 25. The existing UCSB Shuttle Route 27 can be extended north along Storke Road to serve this rail station in the daytime.

The weekend service plan under the rail transit service package anticipates increases in weekend service levels on the local MTD routes to match those planned for weekday daytime and evening service levels as shown in Table 3-4. Service levels on the Waterfront Shuttle would be increased to match the State Street shuttle. The extended Waterfront Shuttle summer service described in the enhanced bus transit package would also be included. Thirty minute weekend service along MTD Route 22 and extending it north to the Santa Barbara Botanical Gardens is also assumed for the rail transit service package.

Costs

The estimated capital costs for the rail transit package range from $134 million (1994 dollars) for the Diesel Rail Car (DRC) technology operating on existing Southern Pacific tracks to $357 million (1994 dollars) for a Light Rail Transit (LRT) system which would require that 22 miles of new track be installed along the Southern Pacific right-of-way to operate, along with associated electrical power distribution system. Both rail technologies would require a vehicle maintenance facility and associated vehicle storage yard along with the acquisition of vehicle rolling stock. Of these totals, it is estimated that $10.5 million would be needed to purchase additional buses to operate the express bus service and expanded feeder bus routes contained in this package and another $12 million in other support elements such as park and ride lots, rail stations, and expansion of bus maintenance facilities to accommodate the larger fleet size.

Annual operating and maintenance costs are estimated to increase by $10.5 million over current levels for the LRT option and $15.5 million for the DRC option. LRT is less costly to operate and maintain than the DRC technology, though it is significantly more costly to construct within this Corridor. Fares would typically cover between 30 to 40 percent of these operating costs. Specific fares would be set by MTD, but would likely range from $1.00 to $2.00 (1994 dollars) per one-way trip and might vary by the distance traveled. For example, the San Diego Trolley's fare ranges between $1.00 to $1.75 per trip, depending upon the distance traveled. This compares with MTD's current full fare of $0.75 per one-way trip irrespective of distance. Potential funding sources for these services and facilities are discussed in Chapter 5.

### 3.3.3 Auto Pricing/Enhanced Travel Demand Management (TDM) Strategy

The Auto Pricing/Enhanced TDM strategy includes two primary elements:

Areawide element: Pricing strategies which affect all travel, and promotional strategies for employers, residents and visitors.
Employer element: full realization of the existing City/County TDM Ordinance.

While the Pricing/Enhanced TDM package includes both elements to form a comprehensive approach to reducing trips of all purposes, the

employer element represents a specific travel market (commuters) for which a mandate and program already exist. It is widely recognized that pricing (e.g. charging drivers for their use of an auto) is one of the most effective strategies for reducing trips, and therefore traffic congestion (Cameron, 1994 and Shoup, 1995). Pricing strategies can be applied to commuters as well as travelers to and through the area. The Pricing/Enhanced TDM strategy also builds upon the existing local TDM ordinance and recent studies prepared for Santa Barbara. More stringent enforcement or greater applicability is proposed for several existing measures.

Areawide Pricing Element

More significant levels of single occupant vehicle (SOV) trip reduction can be achieved by a strategy which addresses all types of travel (e.g. commuting, school, tourist, etc.) than a strategy which only addresses commute trips from and through the Study Area. Selected TDM strategies and promotional concepts would be applied to other trip types as well as commute trips as part of the area-wide element of the Pricing/Enhanced TDM Strategy. Two principal strategies were assessed as part of the area-wide component: area-wide pricing measures and promotional efforts aimed at visitors and tourists. Each is described below:

*Area-wide Automobile Trip Pricing* - A parking fee or charge for parking of $3.00 per day (1994 dollars) for single occupant vehicles (SOVs) and $0.70 per carpool passenger per day would be placed on all public, private and commercial parking spaces in the South Coast. The fee was assumed to affect only long-term parking (longer than 90 minutes) in the South Coast so as not to impact shopping or other short term trips. The 90 minute free program sponsored by downtown property owners and businesses could either be exempted from or could be eliminated by this program depending on local policy consensus. The parking fee was applied to all travelers except those parking less than 90 minutes to assess the ability to induce mode changes in both commuters and other travelers. Such a fee could generate considerable revenue ($25 - $50 million per year) to be used for the support of travel alternatives, such as improved transit services and other TDM strategies. It could have negative collateral impacts such as inducing drivers to park on residential streets and making the South Coast somewhat less attractive to tourists traveling by auto.

*Transit fare reduction* - Reduced transit fares for all types of riders and for all trip types would induce additional transit ridership. Research on ridership response to fare reductions indicates a national average fare “elasticity” of 0.37; that is, for every 10% decrease in fares, there is a corresponding 3.7% increase in transit ridership. This level of transit fare reduction could generate a 18.5% average increase in transit ridership. The reduction of fares by 50 percent was included in the Pricing/Enhanced TDM analysis alternative. Coordination of fare reduction with Amtrak and other services outside of the area

could be explored, but was not included in this analysis.

Promotional efforts that support TDM strategies to visitors, tourists and others are included in this approach. Several measures are to be included as part of the TDM strategy:

A "*Carfree Santa Barbara*" promotion is intended as a promotional campaign to provide information on alternatives to the automobile. Information is targeted to both potential and arriving visitors and tourists through travel agencies in southern California. The Santa Barbara Conference and Visitors Bureau could provide similar information to their clients and inquirers.

*Free downtown shuttle tickets* - for visitors arriving via Amtrak or those staying along the route of the electric shuttle, free shuttle tickets would be provided prior to arrival in Santa Barbara. This is intended to encourage travelers to use alternatives on their way to or within Santa Barbara.

*Merchant coupons and giveaways* - Santa Barbara merchants would provide discount coupons or giveaways for "carless" visitors to Santa Barbara. This program would be extended to users of commute alternatives as part of an enhanced TDM ordinance.

Employer Element

As discussed above, the employer element involves the full implementation of the existing City/County TDM Ordinance. Currently, over 420 employers with 20 or more employees are implementing TDM programs for their employees in response to the ordinance. The commute options, incentives and level of effort varies greatly among companies. It is recognized that many employers in Santa Barbara are already implementing several of the strategies listed below and *Traffic Solutions* is already involved in most of these activities. The 1993 employer survey conducted by *Traffic Solutions* found that between 17% to 33% of employers are offering some, but not all, of these measures. However, the employer element of the Pricing/Enhanced TDM Strategy is designed to assess the impact of employer-based TDM strategies if fully implemented by all (100%) affected employers in the future. The full implementation of existing ordinances assumes that **all** employers with 20 or more employees in the region would be mandated to implement aggressive TDM programs with the following characteristics:

a part- or full-time employee transportation coordinator, ridematching and information services,
- flexible work hours for employees who rideshare,
- vanpool development with operating assistance,
- on-site bus pass sales and information programs,
- a guaranteed ride home program,

a 4/40 work week that would be available to and utilized by 22 percent (based on national research) of the total employee population,

a 9/80 work week that would be available to and utilized by 7 percent (based on national research) of the total employee population,

- a telecommuting program would be available to and utilized by 18 percent (based on national research) of the total employee population an average of two days per week,
- preferential parking for carpools and vanpools which save employees walking time from their vehicle to the building entrance, and

a transit subsidy of $0.50 per day for employees who take the bus to work.

Additional employer involvement would be supported by regional marketing and promotion, for example:

company transportation fairs co-sponsored by *Traffic Solutions*,
employer training and assistance available from *Traffic Solutions*,
- public relations efforts to recognize early success stories, and
- direct marketing to commuters on new and enhanced travel options.

Costs

Aggregate additional annual costs to South Coast employers for this full implementation program are estimated at $4.7 million per year in 1994 dollars (including the transit fare subsidy described above). This estimate is based upon soon to be published national research on observed costs of various TDM programs. The $3.00 per day fee on long term parking could generate upwards of $25 million per year in revenues, which could be used to reimburse employers for the costs of these other strategies and to fund expansion of bus services and other alternative mode facilities and programs. Therefore, the overall fiscal impact (including the parking fee) of this alternative to the public and private sectors would be at worst neutral (all parking fee revenues used to fund program elements) or could generate excess revenues for transportation or other improvements in the South Coast.

### 3.3.4 Elements Common to All Strategies

The following describes measures, activities and improvements intended to support the three alternative packages and encourage alternative travel modes to the single occupant automobile. These supporting measures and activities are presented in two general categories, nonmotorized support strategies and transportation system management strategies.

Nonmotorized Support Strategies

Bicycling and walking provide reasonable modal alternatives to the automobile for relatively short distance trips. Combined with local and regional transit service, bicycling and walking can also be key components of longer or more regionally oriented trips. Based on the *1990 Census Analysis of Journey to Work Information* for the Santa Barbara Census Division (see Figure 2-2), approximately 3.7 percent of overall home-based work trips were made by bicycle, including a high of 27.2% of work trips originating in Isla Vista, which includes UCSB. The 1993 *Traffic Solutions* employer survey indicated that 3.3%

of employees rode a bike to work and 3.7% walked to work. By including improvements and activities which would make bicycling safer, more convenient, and more comfortable, the number of people who use bicycles as their primary mode of transportation or as a means of accessing the bus transit service is likely to increase. Improvements likely to enhance bicycling opportunities within the Corridor area have been identified which:

can be integrated into various features of the enhanced bus transit service package, and
are compatible with the Santa Barbara County *Regional Bikeway Study* (SBCAG, 1994).

The following projects were identified in the *Regional Bikeway Study,* and would improve the safety and continuity of bikeways in the Highway 101 Corridor area. Figure 3-3 indicates the location of the listed facilities.

Install Class II bike lanes on Linden Avenue from Beach to Sandyland Avenue,
Install Class II bike lanes on Linden Avenue from (and including) overcrossing of Highway 101 to El Carro,
Install Class II bike lanes on Casitas Pass overcrossing of Highway 101,
Install Class II bike lanes along Via Real between Padaro Lane in unincorporated Santa Barbara County and Santa Ynez Avenue in Carpinteria,
- Construct a Class I alternative to Route 101 along the Southern Pacific Railroad right-of-way,

Install Class III bike lanes on Pedregosa Street from Castillo Street to Laguna Street,
- Construct Class I bikeway (Ortega Hill Bikeway) from Sheffield Drive to Evans Avenue,
- Complete the missing segment of the Cabrillo Boulevard Bikeway, Cliff Drive segment,
- Install Class II bike lanes on Canon Perdido Street from Bath Street to Milpas Street,
- Install Class II bike lanes on Alisos Street between Highway 101 and Canon Perdido,

Install Class II bike lanes on Garden Street including Garden Street underpass, connecting to the Cabrillo Boulevard Bikeway,
Improve the Mission Street underpass to include Class II bike lanes, or
Construct an off-road bikeway along the Southern Pacific Railroad from Modoc Road to Pedregosa Street as an alternative to on-street travel on the Mission Street underpass.

The following improvements would provide better access to the transit system for bicyclists and provide a far greater level of integration between the two modes.

Bike lockers and racks will be included at the park-and-lots for the express bus stops at Carpinteria (Linden Avenue), Five Points, Goleta (Hollister Avenue at Ward Memorial Boulevard), and Isla

Vista. Additionally, where safe and practical walk access can be accommodated, bike lockers will also be provided at other freeway express stops. It is anticipated that locker capacity for approximately 60 bikes will be provided at flyer stops.

Additional bike lockers will be installed at locations within reasonable walking distance to the downtown Santa Barbara Transit Center.

Bike racks on buses for easy transfer between these modes will be installed on all MTD buses and shuttles.

Transportation System Management Strategies (TSM)

Caltrans is presently developing a Traffic Operations System Plan for District 5, which includes Santa Barbara and the Highway 101 Corridor area. The plan is intended to address a 20-year time frame and calls for cooperation and coordination between Caltrans and responsible agencies to maximize the effectiveness of the complete transportation system. The plan includes operational improvements including TSM measures such as implementation of a traffic operations center to monitor state highway operations in District 5, ramp metering in urbanized areas, changeable message signs at key highway junctions, implementation of highway advisory radio, peak hour freeway service patrols and electronic detection and monitoring stations, and closed circuit television and communications systems, all aimed at more effectively managing traffic flow and optimizing capacity on the state highway system in District 5. Within the Highway 101 Corridor, the addition of ramp metering and provision of HOV bypass lanes at the Linden Avenue, Milpas Street, and Castillo Street freeway ramps, would improve traffic flow on the freeway mainline and provide incentives for HOV vehicles, including buses. Where sufficient shoulder width exists, the provision of bus-only lanes, or other bus priorities to enhance bus schedule reliability at busy weekend or weekday peak periods would increase the person-carrying capacity of Highway 101 and provide an inducement to use transit as an alternative to the single-occupant automobile. These measures are considered common to all of the packages.